

ABSTRACT OF THE DISCLOSURE

In a film formation chamber, a gas flow to be introduced is rectified in a direction away from the film formation surface of the substrate on which the film is to be formed, so as to exhaust the fine particles generated in the discharge space and the fragmental particles generated by exfoliation of the film from the wall of the vacuum chamber and the discharge electrode, thereby preventing the particles from adhering the film formation surface of the substrate. The fine particles and fragmental particles are sucked and exhausted from a plurality of apertures provided on the entire surface of the discharge electrode to establish a steady state in which the amount of a film deposited on the discharge electrode and the amount of an exfoliating film to be exhausted are equal to each other, thereby allowing continuous film formation without cleaning the discharge electrode over a long period.